

**REMARKS****Summary of the Office Action**

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kondo (WO 02/061458) (hereinafter "Kondo") in view of Tsuda et al. (U.S. Patent No. 6,399,966) (hereinafter "Tsuda").

**Summary of Response to Office Action**

Applicants have amended claim 1 to differently describe an embodiment of the instant application's disclosure. Accordingly, claims 1-8 remain pending for consideration.

**Summary of Examiner Interview on September 13, 2005**

Examiner Anthony Quash and Primary Examiner N. Wells are thanked for the courtesies extended to Applicants' undersigned representative in a telephone interview conducted on September 13, 2005. During the Interview, the following arguments set forth below in the traversal of the rejection under 35 U.S.C. § 103(a) were discussed. The Examiners both generally expressed agreement with these arguments during the Interview. However, the Examiners indicated that Applicants are required to include such arguments in writing in a formal response to the outstanding Office Action. Accordingly, the arguments discussed during the telephone interview are presented below in accordance with the Examiners' indication.

**Rejections under 35 U.S.C. § 103(a)**

Claims 1-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kondo in view of Tsuda. As discussed with Examiner Anthony Quash and Primary Examiner N. Wells in a telephone interview conducted on September 13, 2005, these rejections are respectfully traversed for at least the following reasons.

During the interview, Applicants' undersigned representative began by explaining the features of the illuminant combination of independent claim 1 in connection with Fig. 3A, for example. An explanation was presented of how embodiments of the illuminant (10 in Fig. 3A) of the instant application include an electron entrance surface for receiving incident electrons into the illuminant. Applicants' undersigned representative went on to explain how fluorescence is generated in the nitride semiconductor layer 14 and how at least part of the generated fluorescence is output from a fluorescence emitting surface shown at the bottom of the illuminant 10 of Fig. 3A.

Next, Applicants' undersigned representative explained that the applied primary Kondo reference is similar in some respects to arrangements discussed in the background portion of the instant application's specification. It was explained that these prior arrangements do not allow for sufficient response time of fluorescence generation for particular applications such as certain scanning electron microscopes, mass spectrometers and electron beam detectors, as discussed in the specification of the instant application.

Accordingly, it was explained that an important feature of the instant application's disclosed embodiments is to achieve a reduced response time of fluorescence generation by providing a quantum well structure layer (such as 14C in Fig. 3A) within the nitride semiconductor layer (14 of Fig. 3A).

Applicants' undersigned representative went on to explain that the applied secondary reference to Tsuda is directed to a light emitting device ("LED") that is particularly different from the field of the instant application which is concerned with electrical to optical ("E/O") converter technology. In this regard, Applicants' undersigned representative emphasized particular arguments such as those included in the previous response filed on June 8, 2005 with

regard to the differences between the operation of an LED arrangement as compared to an E/O converter arrangement. For example, an explanation was presented of how light does not propagate through an LED arrangement in the same manner as in an E/O converter arrangement such as that disclosed in the instant application.

In addition, Applicants' undersigned representative explained how the Office Action states at page 3 that "it would have been obvious to a person of ordinary skill in the art ... to have the nitride layer contain a quantum well structure in order to allow a higher luminous efficacy as taught in Tsuda." We explained in this regard that Tsuda's discussion of obtaining a higher luminous efficacy is associated with LED technology because it involves the combination efficiency of supplied electrons and supplied holes from electrodes such as 107 and 108, respectively of Fig. 1 of Tsuda. However, Applicants' undersigned representative explained the Applicants' position that this "luminous efficacy" feature is not at issue in the technical field associated with an electrical-to-optical converter arrangement, such as that disclosed in the instant application, because of the differences in operation between these two types of technologies, as previously discussed.

Accordingly, the rejection of independent claim 1 under 35 U.S.C. § 103(a) is traversed for at least the foregoing reasons.

Applicants thank the Examiners for both generally expressing their agreement with these arguments during the Interview. The instant paper is being filed in accordance with the Examiner's indication that a formal response to the outstanding Office Action dated June 24, 2005 must still be filed.

In addition, Applicants note that they have opted to implement a minor change to independent claim 1, as indicated above. However, it is respectfully submitted that this change does not affect the arguments discussed during the telephone interview, as set forth above.

Accordingly, Applicants respectfully assert that the rejections under 35 U.S.C. § 103(a) should be withdrawn because the applied art of record, whether taken singly or combined, do not teach each feature of independent claim 1. As pointed out in MPEP § 2143.03, “[t]o establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 409 F.2d 981, 180 USPQ 580 (CCPA 1974).” In addition, dependent claims 2-8 are in condition for allowance at least for the same reasons as independent claim 1, and the reasons set forth above.

### **CONCLUSION**

In view of the foregoing, Applicants respectfully request reconsideration of this application, withdrawal of all rejections, and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants’ undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0573. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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Dated: September 22, 2005

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